

CLIPPEDIMAGE= JP403286518A

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DOCUMENT-IDENTIFIER: JP 03286518 A

TITLE: MANUFACTURE OF THIN SEMICONDUCTOR CRYSTAL LAYER

PUBN-DATE: December 17, 1991

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ABSTRACT:

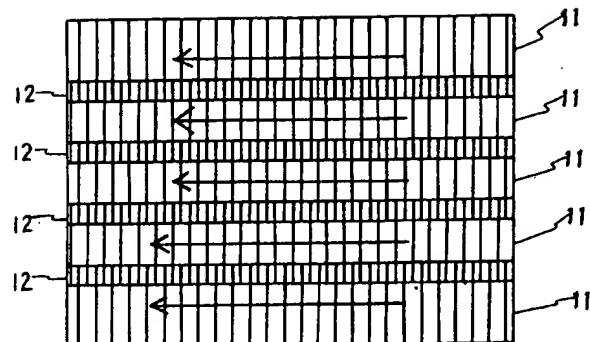
PURPOSE: To laminate a thin semiconductor crystal layer which is uniform and whose quality is good and to be provided with a characteristic as an element formation substrate for a three-dimensional semiconductor device by a method wherein the shape of a beam is deformed to be a sheet shape, the beam is scanned and, at the same time, a thin semiconductor film is irradiated with the beam.

CONSTITUTION: A silicon layer 32 is formed on the whole surface of a square glass substrate 31. When a laser beam is scanned, it is moved at a speed of 1 [mm/s] in the Y-direction. The width of the laser beam in the X-direction is

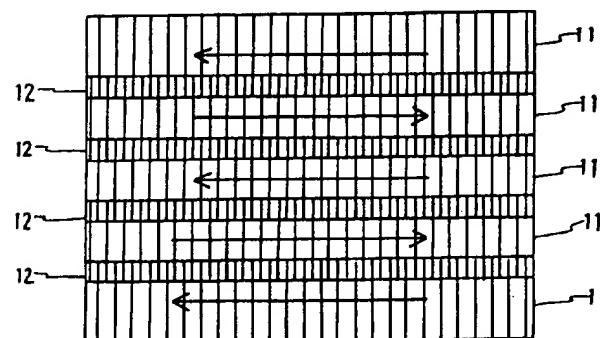
adjusted by changing the distance between a concave lens 22 and a convex lens

23. The energy density of the laser beam is adjusted by the distance between a specimen and a convex lens 25. When the distance is to be shortened, a convex lens whose curvature is large is used. Thereby, the scanning direction of the laser beam is only in the Y-direction. Thereby, it is possible to prevent the annealing operation of the silicon layer from being overlapped and to execute the annealing operation in order to obtain the silicon layer whose physical properties are good and whose quality is good.

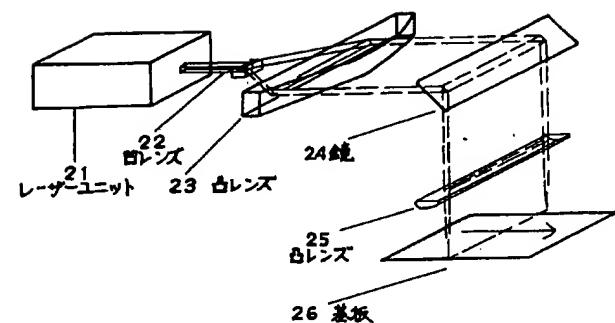
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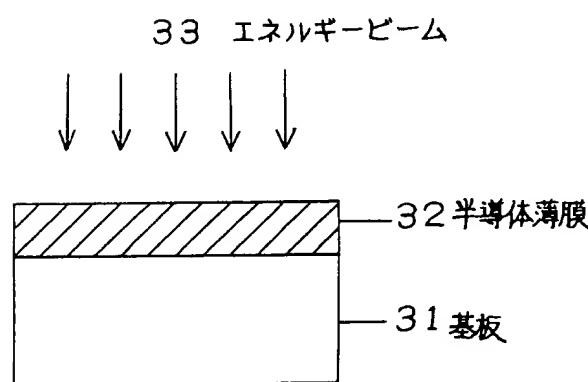
第1図a



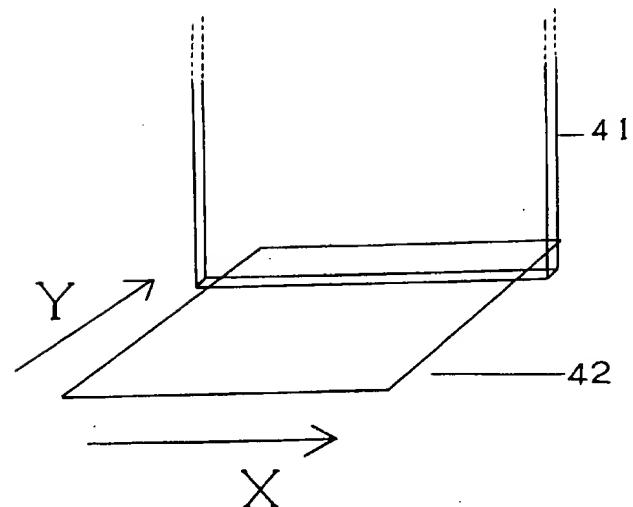
第1図b



第2図



第3図



第4図